United Nations Industrial Development Organization

Distr.
LIMITED

ID/WG.433/22
20 February 1985

ENGLISH

ESCAP Regional Energy Development Programme (REDP)
Regional Network for Small Hydropower (RN-SHP)

Technical Advisory Group (TAG)
First Meeting

Hangzhou, China, 11 - 13 December 1984

REPORT*

* This document has been reproduced without formal editing.

V.85-22942

Abbreviations

ASEAN	Association for South-East Asian Nations
ELC	Electronic Load Controller
ESCAP	Economic and Social Commission for Asia and the Pacific
HRC	Hangzhou Regional Centre
IDS	Integrated Development Systems
INTIB	Industrial and Technological Information Bank
ITDG	Intermediate Technology Development Group
MHINEX	Micro/Mini-Hydro Information Exchange System
OLADE	Latin American Energy Development Organization
REDP	Regional Energy Development Programme
RN-SHP	Regional Network for Small Hydropower
R+D	Research and Development
SHDB	Small Hydel Development Board
SHP	Small Hydropower
TAG	Technical Advisory Group
TCDC	Technical Co-operation among Developing Countries
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization

CONTENTS

		Page
I.	RECOMMENDATIONS	1
II.	INTRODUCTION	3
	- Objectives	5
	- Organization	5
	- Opening Ceremony	6
	- Election of Officers	7
	- Adoption of Agenda	8
III.	SUMMARY OF DISCUSSIONS	9
	- Review and Evaluation of Activities during 1982/83/84	9
	- Guidelines for Future Activities of the RN-SHP Proposal for 1984/85/86 by the Interim Co-ordinator	12
	- Priority Subject Areas and Projects	14
	- Decentralization of RN-SHP Activities	15
	- Strengthening of Network Activities	16
	- Financial Resources	16
	- Designation of National Sub-Focal Points for SHP	18
	- Technical Advisory Group Membership and Meetings	20
	- Date and Venue of Next Meeting	21
	- Other Matters	21
	- Adoption of the Report	21
	- Closure of the Meeting	21

ANNEX

I.	LIST OF PARTICIPANTS	22
II.	LIST OF DOCUMENTS	25

I. RECOMMENDATIONS

(Agenda Item 9)

1. The Technical Advisory Group expressed its satisfaction with the work carried out during 1982/83/84 under the Regional Network for Small Hydropower (RN-SHP), and the efforts made by the Hangzhou Regional Centre - Asia + Pacific - (HRC), acting as the Interim Secretariat of the RN-SHP, in organizing and implementing the work programme in spite of the severe financial constraints.

2. The TAG recommends reallocation of presently available funds under projects RAS/84/001 and RAS/80/033, to better reflect and respond to the priority needs of the member countries. Accordingly, based upon a list of priority topics compiled for that purpose, the RN-SHP 1985/1986 programme of activities was reformed and endorsed as per Table 2, i.e. US$190,500 for 1985 and US$82,000 for 1986.

3. The TAG recommends that with the co-operation of national focal points, UNIDO initiate necessary action to formulate and/or finalize project documents/project concept sheets, and present them to potential donor countries and solicit, on behalf of RN-SHP, the needed support for identified priority projects for which no funds could be made available from existing resources in hand. Towards this end, the TAG recommends that member national focal points, especially those that have been selected as participating countries for the projects, provide the necessary support to expedite UNIDO's task.

4. The TAG recommends that appropriate measures and a mechanism be worked out to communicate regularly to potential donor countries and organizations, information on priority projects and programmes of common interest and significance to the member countries, in order to enable implementation of the work programme over and above the financial resources made available through the REDP and other UNDP/UN sources.

5. In order to attain a reasonable level of activity-implementation under the RN-SHP, the TAG recommends that part of the project activities be decentralized so that the preparation of documentation, organization of activities as well as the bearing of hosting cost could be appropriately shared among the participating member countries.

6. After reconfirming that the RN-SHP consultation missions were extremely useful in establishing contacts and strengthening Network activities, the TAG recommends that provided sufficient resources could be secured, similar missions should be carried out more often, possibly on an annual basis. In this respect, the TAG further recommends that such missions might include representatives from selected participating member countries so that the lines of contact could also be expanded horizontally between and among the member countries. Subject to availability of funds, bilateral consultative missions might also be organized in the future.

7. The TAG strongly recommends that the REDP Senior Co-ordinator urge the member countries who had not yet nominated sub-focal points for SHP, to take timely actions for such nominations in order not to disturb the effective functioning of the co-operative arrangements within the framework of the RN-SHP.

8. The TAG recommends that only those member countries who have nominated their sub-focal points for SHP be invited to attend the second TAG meeting in 1985, in Manila/Philippines.

9. The TAG recommends that the TAG meetings should be opened to selected donor agencies who would be participating fully in the discussions as Co-operate Members, but would have no voting rights at the meetings.

10. The TAG recommends that in view of the importance of convening the TAG meetings annually and the limited resources available for the TAG meetings, the funds should be used only to finance international travel of TAG members, while the DSA would be contributed by respective governments.

11. The TAG recommends that UNIDO be requested to explore with the Project Manager of the Pacific Energy Development Programme (PEDP) the possibility of securing similar support as provided by the REDP to permit Pacific participating member countries to attend future TAG meetings, starting from the second TAG meeting in 1985.

II. INTRODUCTION

Background

12. In reviewing the energy situation in developing countries in relation to their industrialization process, the subject of new and renewable sources of energy has been recognized to be of major importance. This in fact was confirmed by the United Nations Conference on New and Renewable Sources of Energy, held in August 1981, in Nairobi, Kenya, as well as by the High-level Expert Group on Energy and Industrialization, Preparatory to the Fourth General Conference of UNIDO, held in Oslo, Norway, from 29 August to 3 September 1983.

13. Within the field of new and renewable sources of energy, small hydropower was identified as being of major significance in connection with the supply of electric power for industrial application in remote and isolated rural areas not covered by the national grid network. This potential was recognized earlier by UNIDO and ESCAP which jointly organized in September 1979 the First Expert Group Workshop on Mini Hydropower Generation in Kathmandu, Nepal. A Second Workshop combined with a study tour followed in 1980, at Hangzhou, People's Republic of China, and Manila, The Philippines when the People's Republic of China, in response to the recommendations of the first and second mini hydropower meetings, proposed to establish a Regional Centre for Research, Development and Training (HRC), in Hangzhou, with the support and co-operation of UNDP, UNIDO and ESCAP.

14. In July 1982, A Senior Expert Group Meeting on small/mini hydropower was held jointly by UNDP, UNIDO, ESCAP and China, which recommended that an ESCAP Regional Network for Small Hydropower (RN-SHP) should be established within the framework of the Regional Energy Development Programme (REDP) of ESCAP, and with the Hangzhou Regional Centre for Small Hydropower (HRC) acting as its interim secretariat and its director as the RN-SHP co-ordinator. It further recommended that a Technical Advisory Group (TAG) be established, consisting of heads or senior officers of national organizations directly responsible for small hydropower development. The TAG, which was to meet once a year, would be expected to provide guidance to the RN-SHP co-ordinator in the formulation of the work programme, project activities and their implementation, and give advice to the Senior Co-ordinator of the REDP.

15. The Steering Committee of the REDP at its First Session in May 1983 took note of the report of the Senior Expert Group and the recommendations contained therein, including the establishment of the RN-SHP, and stated that the RN-SHP was not to be viewed as an institution, but as representing a co-operative arrangement among member institutions for carrying out specific activities. The Steering Committee agreed that REDP support should be provided for well-defined activities carried out within the RN-SHP framework, taking into account the work programme proposed by the Third Small Hydropower Workshop, held at Kuala Lumpur, Malaysia, in March 1983, and further confirmed that the Technical Advisory Group, which would assist the Steering Committee to provide overall guidance for the RN-SHP, would be formed by requesting the REDP national focal points to nominate national subfocal points for small hydropower.

16. Since its official establishment, the RN-SHP had limited possibilities of initiating project activities due to extreme financial constraints. For this reason, emphasis was focused on implementing workshops in two priority areas identified by the Senior Expert Group, i.e. the First Training Workshop in Mini-Small Hydropower, at Hangzhou, China, in May/June 1983, and the Second Training Workshop on Hydrology for Small Hydropower Generation at Hangzhou, China, in September 1984.

17. With the transition of the REDP from Phase I to Phase II and the official approval of Phase II (RAS/84/001), as well as other resources made available by UNDP under RAS/80/033, it has become necessary to review the past work, and assess priority needs for future activities in order to systematically respond to identified areas and subjects of common concern, needs and importance to the member countries in the field of small hydropower development and applications.

18. The First Technical Advisory Group, intitially scheduled for mid-1983, was not convened due to lack of activities on the one hand, and lack of resources on the other, however, at the point of transition of REDP, it was considered not only useful but even of significant importance that it be held as soon as possible.

Organization

19. The First Meeting of the Technical Advisory Group was held from 11-13 December 1984 at the Wanghu Hotel, Hangzhou, P.R. China, jointly by the Secretariat of the Regional Network for Small Hydropower and UNIDO, in co-operation with the ESCAP-Regional Energy Development Programme and the Government of China through the Ministry of Water Resources and Electric Power. The Meeting was attended by eight representatives from five national Subfocal Points for Small Hydropower. The Interim Co-ordinator of the Regional Network for Small Hydropower, together with two staff members of the Secretariat, the Senior Co-ordinator of the ESCAP-Regional Energy Development Programme, as well as a representative from UNIDO, and seven observers from the host country also participated in the Meeting. A List of Participants is attached as Annex I.

Objectives

20. The Technical Advisory Group had the following objectives:

a) to review and evaluate activities undertaken by the Regional Network for Small Hydropower during 1982/83/84;

b) to consider and develop guidelines for future activities during 1984/85/86;

c) to identify priority subject areas and projects at the national level with regional significance;

d) to exchange views on the decentralization of RN-SHP activities for strengthening Network activities;

e) to exchange views on ways and means of securing necessary financial resources for implementing the work programme;

f) to exchange views on how to increase the number of designated national subfocal points for small hydropower as a functional element of the RN-SHP;

g) to review and recommend the membership composition of the Technical Advisory Group and frequency of meetings.

Post-meeting visits to Suzhou and Shanghai were organized by the Ministry of Water Resources and Electric Power and the RN-SHP Secretariat.

Opening Ceremony (Agenda Item 1)

21. The opening ceremony was held at the Zhejiang Hotel, Hangzhou. Mr. Deng Bingli, Deputy Director, Department of Rural Electrification in charge of small hydropower, Ministry of Water Resources and Electric Power, Beijing, welcomed the First Technical Advisory Group Meeting participants, many of them old friends with whom he had attended previous meetings together. He mentioned that the Chinese Government through the Ministry of Water Resources and Electric Power made great efforts to establish the Hangzhou Regional Centre for Small Hydropower, providing funds amounting up to 6.5 million Yuan RMB, some US$2.6 million, for civil construction work including a well equipped, fourteen storied main building for research, training, information and consultancy, which was expected to be completed in 1986. He expressed his belief that the First Technical Advisory Group Meeting would have profound significance in the field of SHP development among the countries of the region.

23. Mr. Zhong Shijie, Director of the Department of Water Conservancy of Zhejiang Province, Hangzhou, referred to the historical interlinkage of water and the Zhejiang Province, with more than 6,000 SHP stations and a total installed capacity of 600 MW constructed for the economic and social benefit of the population.

24. Mr. Zhang Fangyu, Chief Secretary, Municipal Government of Hangzhou, speaking on behalf of the Mayor, expressed the continuation of their open-door policy which led to the setting up of many close links with foreign countries, particularly in the neighbouring Asia-Pacific countries. Since the creation of the Hangzhou Regional Centre and the Regional Network for Small Hydropower, many foreign specialists and UN officials had visited Hangzhou and he felt it was a great honour for Hangzhou. He wished the participants successful deliberations and a pleasant stay in Hangzhou.

25. Mr. F. Harahap, Senior Co-ordinator of the Regional Energy Development Programme - ESCAP, Bangkok, brought the greetings of Mr. S.A.M.S. Kibria, Executive Secretary of ESCAP. He emphasized the significance of the work of the Technical Advisory Group which was to review progress achieved and provide guidance to the Interim Co-ordinator in the formulation of the work programme, project activities, and their implementation for the coming 1985/86 biennium, and that the results would constitute valuable inputs for the Thrid Session of the REDP Steering Committee in providing overall guidance on co-operative activities in the field of SHP in the region.

26. The Head of the Development and Transfer of Technology Branch of UNIDO, Vienna, conveyed the greetings of Mr. M. Kulessa, Resident Representative of the UNDP/Beijing, and of the Director, Division for Industrial Studies of UNIDO, to the participants of the Technical Advisory Group. He then commended the excellent work carried out by the RN-SHP Secretariat in spite of the extreme constraints on the financial resources, and also expressed his thanks for the strong support provided by the Government of China. He emphasized the importance to make a critical review of the past
2 1/2 years which would lead to formulate recommendations for the Interim Co-ordinator to carry out realistic and practical activities that would respond to the priority needs and bring positive impacts in the development of SHP programmes in the member countris, during the forthcoming years.

27. Mr. Zhu Xiaozhang, Interim Co-ordinator of the Regional Network for Small Hydropower, referred to the experiences gained during the recent consultation mission to three member countries of RN-SHP, and emphasized the great expectations he and his colleagues within and outside the Centre had on the results of the TAG Meeting.

Election of Officers (Agenda Item 2)

28. Before going into the nomination of the Meeting officers, Mr. Zhu Xiaozhang, Interim Co-ordinator of the Regional Network for Small Hydropower, expressed his feelings that as he was participating in the capacity of the Interim Co-ordinator, it seemed inappropriate that the usual UN procedure be followed where the host country assumes the chairmanship of the Meeting. The Group accordingly elected Ms. Zenaida Santos, Executive Director, Mini-hydro Development Office, National Electrification Administration, Philippines, as Chairperson, and Mr. R.B. Shrestha, Project Director, Small Hydel Development Board, Nepal, as Rapporteur.

29. The participants were then given the opportunity to visit the site of the Hangzhou Regional Centre and inspect the facilities available for the RN-SHP Secretariat. After visiting the documentary exhibition on the Historical Development of the RN-SHP activities, the participants viewed four video films on small hydropower prepared by the RN-SHP Secretariat, and one film, although still in its unedited form, prepared by NEA/Bangkok.

Adoption of Agenda (Agenda Item 3)

30. The Meeting adoped the following agenda:

1) Opening of the Meeting
2) Election of Officers
3) Adoption of Agenda
4) Review and evaluation of activities during 1982/83/84
5) Guidelines for future activities of the RN-SHP
   a) Proposal for 1984/85/86 by the Interim Co-ordinator
   b) Priority subject areas and projects
   c) Decentralization of RN-SHP activities
   d) Strengthening of Network activities
6) Financial resources
7) Designation of national Sub-Focal Points for SHP
8) Technical Advisory Group membership and meetings
9) Recommendations
10) Date and venue of next meeting
11) Other matters
12) Adoption of the report
13) Closure of the Meeting

31. As background material, a number of documents were prepared by the Secretariat of RN-SHP, UNIDO, as well as TAG member countries, as per List of Documents, attached as Annex II.

III. SUMMARY OF DISCUSSIONS

Review and Evaluation of Activities during 1982/83/84 (Agenda Item 4)

32. The Interim Co-ordinator introduced activities implemented during 1982-1984 under the RN-SHP, based on document ID/WG.433/5. He stated that the scope of work of the RN-SHP during the period under review was based on the recommendations of the Senior Expert Group Meeting held in July 1982 in Hangzhou, which could be summarized as follows:

a) to organize an information service, covering both technical and general aspects;

b) to accept or recommend candidates for training from other focal points;

c) to make available short-term advisory services;

d) to undertake R&D projects depending on the facilities available to the focal points;

e) to organize meetings for the benefit of the Network; and

f) to establish links with institutions outside the Network.

33. He reported on the sources of funding for setting up the Hangzhou Regional Centre for SHP, as well as for starting up the RN-SHP activities, as given in Table 1.

Table 1:

Source of Funds since November 1981

	US$	
UNDP		
DP/RAS/80/001 (ESCAP-REDP-UNIDO)	70,000	
DP/RAS/80/033 (UNDP-UNIDO)	347,000	
DP/CPR/81/004 (UNDP-UNIDO)	220,000	
	637,000	
Government of the P.R. China		
(RMB 2 million) + salaries and overheads	800,000	
UNIDO		
administrative support (in kind)		
Additions since 1984		
UNDP		
DP/RAS/80/033 (July 1984) (REDP-UNIDO)	36,000	) Hydrology workshop
DP/RAS/80/033 (Aug. 1984) (UNDP-UNIDO)	200,000	) for 1985/86
DP/RAS/84/001 (Oct. 1984) (REDP-UNIDO)	100,000	
Government of the P.R. China (April 1984)		
(RMB 4 million) for Phase II buildings	1,600,000	

34. Regarding the activities carried out, the following discussions emerged:

35. It was agreed that the RN-SHP Newsletter, so far two issues, kept the Network lively through exchange of views and news, both administrative and technical. It was, however, pointed out that there was further scope for improvement. In this connection, it was suggested that a more active contribution from the member Sub-Focal Points could further improve the usefulness of the Newsletter.

36. As to the two training workshops organized by the Hangzhou Regional Centre, it was confirmed that these were relevant to the needs of the participating members, and the teaching material was considered to be useful for designers and the people involved in SHP activities.

37. The representative of Nepal indicated that the training workshops held under the RN-SHP were useful, and the training materials from those sources are still being used in Nepal until now. He further called for more training workshops in the future.

38. The representatives of Sri Lanka and Thailand expressed satisfaction with the past work of the Network.

39. The Senior Co-ordinator of REDP commended the Hangzhou Regional Centre for providing the service of the Interim Co-ordinator and staff support for the Regional Network on Small Hydropower, and stated that considering the difficult years of constrained financial allocations during the last three years, the achievements of the Regional Network were very satisfactory.

40. The representative of UNIDO commended the achievements of the RN-SHP as reported and urged that other countries start to assume larger responsibility in development of the Network.

41. Regarding the "research and development project on telemetry and automation of Panxi Cascade Stations", on the query from the representative of UNIDO whether similar activities exist in other member countries of the region, the Interim Co-ordinator indicated that, as far as he was aware, no other similar research project existed in the area, and that co-operative research on this subject would not be feasible at this stage in the light of available budgetary means. However, the project would be open for demonstration to future training workshops and consultation missions.

42. On the proposed co-operative research and development project on "Application and local assembling of electronic load controllers at SHP stations in the ESCAP region" in 1985, the representative of Thailand queried whether the Electronic Load Controller (ELC) is applicable for systems larger than 100 kW. The Interim Co-ordinator stated that at the present state of technology, it is not available. He further indicated that two other member countries would be involved in the R&D project on local assembly and application of low-cost electronic load controllers at micro-hydro power stations.

43. The representatives of Thailand, Sri Lanka and Nepal strongly supported this activity. However, they felt that the allocated funds were too low, and suggested that additional funds be secured by UNIDO/UNDP.

44. The TAG members discussed communication difficulties regarding the questionnaires for the compilation of rosters on regional experts, research organizations and equipment manufacturers, etc. The Interim Co-ordinator stated that three questionnaires were sent out in May 1984 and that the response was so far rather poor.

45. On the ongoing activity of compilation of video films, the representative of UNIDO informed the meeting that consultations were being made with the Public Relations Section of UNIDO on the production of video scenarios. He felt that the production should be carried out on a co-operative basis among the member organizations.

Guidelines for Future Activities of the RN-SHP
Proposal for 1984/85/86 by the Interim Co-ordinator
(Agenda Item 5(a))

46. The Interim Co-ordinator introduced a proposal for the 1984-1986 work programme, and indicated that funds would be allocated from two sources, i.e. REDP Phase II, RAS/84/001 - US$100,000 and RAS/80/033 - US$200,000. He then stated that a preliminary list for allocations for various components of the work programme was prepared on the basis of recommendations of previous meetings, as well as discussions with UNIDO, UNDP and ESCAP-REDP during the past two years. The proposals were prepared as a basis for consideration by the Technical Advisory Group to arrange priority activities as appropriate for the effective use of the allocations available for 1985/1986, amounting to approximately US$270,000 from both sources.

47. In the ensuing discussions, the TAG concluded that the preliminary list of proposals should be revised and updated, as priorities have changed during the course of the past two years, and because of the limited budget available.

48. The representative of the Philippines supported the publication of the quarterly RN-SHP newsletter.

49. The representative of Thailand stated that the proposal for holding a third training workshop on "Simple Low-Cost Feasibility Study for Small Hydropower" in 1985 was similar to the proposal made in the country paper of Thailand. All members of the TAG supported the topic for the third workshop.

50. All members of the TAG supported and endorsed the proposal for holding a fourth training workshop on "Design of Small Hydropower Stations particularly emphasizing simplified low-cost civil construction methods". However, it was stressed that funds for this activity be allocated from existing budget, in order not to be dependent on additional extra-budgetary funds.

51. All TAG members stated that each country had its own project on the subject of "Selection of locally available materials and its utilization in an inexpensive way for the construction of SHP stations", as proposed in the preliminary list of the RN-SHP Secretariat. Therefore, it was felt it might not be a most suitable project for a joint/co-operative R+D project, but an exchange of information and experience on this subject might be taken up as one of the Headquarters activities of the RN-SHP Secretariat.

52. The representative of Nepal proposed a joint research project to be undertaken under the RN-SHP on "Optimum Design of SHP Systems using Computer", which was also extensively discussed with the Consultation Mission of the RN-SHP Secretariat to his country in November 1984. The TAG agreed to include this in the 1985/1986 activities programme.

53. On the updating and expansion of various directories i.e. R&D activities related to SHP; SHP bibliography; SHP experts roster; engineering and consulting companies engaged to SHP; SHP equipment manufacturers; SHP stations in operation; SHP training activities, etc.; the UNIDO representative stated that considerable information and data had already been compiled in UNIDO within the framework of the UNIDO-INTIB, and they could be deployed as input to this activity. In view of this, the representative of the Philippines proposed that allocation of budget made for this activity in the preliminary list could be reduced.

54. On the proposed short-term consultancy services on R&D; local manufacturing of SHP equipment; feasibility studies; SHP construction; equipment selection, etc.; with an allocation of US$5,000 respectively for 1985 and 1986, the representative from Nepal stated that this activity was important, and queried the nature of these consultancies, because he felt that the proposed allocations were too small to achieve significant results. The Interim Co-ordinator clarified that the experts undertaking the consultancies may come from the Hangzhou Regional Centre as well as from other selected member countries.

55. On the production of video films for SHP training with a proposed allocation of US$50,000 for 1985 and additional funds for 1986, all TAG members agreed that this budget allocation could be reduced significantly, as each contributing country could make their own shooting, subject to the scenario being made available. In this case, the editing could be carried out at the Secretariat of the RN-SHP. The representative of UNIDO proposed that production of video films for public relations might also be considered as it would be important for the development of SHP in general and the RN-SHP in particular. It was subsequently agreed that the convening of an expert group meeting to discuss this matter should be included in the 1985/1986 work programme.

Priority Subject Areas and Projects
(Agenda Item 5(b))

56. The TAG members agreed to consider all potential co-operative R&D projects and to establish a priority list, with the strategic approach of accommodating top priority projects for implementation with presently available budget, while the remaining proposals be put into a format appropriate for presentation by UNIDO to prospective donor countries to solicit needed support. The proposals prepared by the TAG members have been issued as a separate document (ID/WG.433/21).

Decentralization of RN-SHP Activities
(Agenda Item 5(c))

57. The representative of UNIDO introduced the basic idea and need for decentralized project implementation as described in document ID/WG.433/4. This approach was felt appropriate to fortify the role of the Hangzhou Regional Centre as the Secretariat of the RN-SHP, since implementation of the work programme components, including the preparation of basic and background documentation, the organization, as well as the bearing of the hosting cost for the respective activities, could be better shared among participating member countries towards achieving a reasonable level of activity-implementation under the RN-SHP.

58. The representative of Thailand stated that his country would be prepared to host an apprenticeship/fellowship programme to share Thailand's experience in the construction, operation and maintenance of micro-hydropower plants under a co-operative management scheme with the strong involvement of the local community concerned.

59. The representative of Nepal felt that it would be more effective if present efforts were to be oriented primarily to strengthen the Secretariat for RN-SHP, and secondarily for decentralization of implementation of activities.

60. The representatives of China and Sri Lanka expressed agreement and supported the implementation of the decentralization idea.

61. The TAG adopted and recommended the concept of decentralization of activities under the RN-SHP.

Strengthening of Network Activities
(Agenda Item 5(d)

62. The Interim Co-ordinator introduced the report of the Consultation Mission which he and his staff undertook in October/November 1984 to Thailand, Nepal and the Philippines. The TAG felt that such missions would be extremely useful in establishing contacts and strengthening Network activities. The TAG proposed that similar consultation missions be organized in the future and arrangements be made so as to also include a selected number of representatives from participating member countries.

63. From the ensuing discussions, the TAG further proposed that subject to availability of funds, bilateral consultation missions might also be organized in the future.

Financial Resources
(Agenda Item 6)

64. The TAG considered the relative importance of the work programme elements, and agreed on the following order of priority for allocation of available financial resources for the period 1985-1986:

a) Training workshops
b) TAG meetings
c) Co-operative research
d) Information packaging and exchange
e) Consultation/study missions
f) Video film production
g) Support for the Secretariat.

65. After carefully considering the various topics proposed by the participating member countries and the Secretariat, the TAG agreed for implementation under the programme element training workshops, on the following ordering of priority:

a) Simplified Low-Cost and Standardized Feasibility Study for SHP
b) Low-Cost Simplified Civil Design for SHP
c) Simple Low-Cost Turbines
d) Operation and Maintenance of SHP Plants
e) Construction Management of SHP Plants
f) Social and Environmental Aspects of SHP Projects

66. Consistent with the strategy stipulated under Agenda Item 5(b) the TAG selected training topics a) and b) for implementation during 1985-1986 with financing from the available funds. The remaining topics would be formulated into proposals appropriate for presentation to donor countries by UNIDO for needed support.

67. The following priority list was decided by the TAG on topics for co-operative research for the period 1985-1986, after examining country proposals as well as those made by the Secretariat:

a) Optimum Computer Based Design of SHP Systems
b) Electronic Load Controller for Plants smaller than 100KW
c) Simple Low-Cost Feasibility Study Methodology for SHP
d) Electronic Load Controller Design as Frequency Sensor/Governor
e) Remote Control and Unattended Operations for SHP Plants
f) Preparation of Design Manual for SHP.

68. Similar to the strategy applied for training topics, the TAG selected co-operative research topics a), b) and c) for implementation during the period 1985-1986 with financing from existing funds. The TAG requested the representative of UNIDO to solicit donor countries for needed support for the remaining co-operative research topics, subject to their formulation into appropriate formats. The TAG urged the member countries to provide UNIDO with necessary and relevant information as well as their co-operation so that UNIDO could duly discharge their above-mentioned tasks in the nearest future.

69. The TAG adopted the allocations of available funds as per Table 2.

Designation of National Sub-Focal Points for SHP
(Agenda Item 7)

70. The TAG strongly recommends that the REDP Senior Co-ordinator be requested to urge the member countries who had not yet nominated Sub-Focal Points for SHP, to take timely actions for such nominations, as this would be imperative for the effective functioning of the co-operative arrangement for specific SHP activities under the Network.

Table 2

RN-SHP PROGRAMME OF ACTIVITIES - 1985/1986

(Agenda Item 6)

Project items		1985	1986	Time	Venue	Participating countries
1.	Training workshop a) Simplified, low-cost and standardized feasibility study methodology	20,000	0	Nov. 1985	Hangzhou	Philippines China UNIDO
	b) Simplified, low-cost civil design and construction methods	38,000	0	Sept. 1985	Manila Kuala Lumpur Hangzhou	Philippines Malaysia China UNIDO
2.	Meetings T A G (Second and Third Sessions)	15,000	15,000	July/85 July/86	Manila Colombo	All Member Countries + UNIDO
3.	Co-operative R&D a) Optimum design of SHP systems using computer	15,000	15,000	Jan.85-Dec.86	Kathmandu	Nepal/China UNIDO
	b) ELC (Electronic Load Controller)	12,500	8,000	Jan.85-Dec.86	China Nepal Sri Lanka	China/Nepal/Sri Lanka UNIDO
	c) Simple, low-cost feasbility study methodology	20,000	0	Jan.-Nov.85	Manila Vienna	Phil/China UNIDO
4.	Apprenticeship/fellowship Onsite training on operation and management	15,000	0	Jun.85	Bangkok	Thailand + selected member countries
5.	Information a) Newsletter	5,000	5,000	Jan.-Dec.	Hangzhou	RN-SHP UNIDO
	b) Roster	0	0	Jan.-Dec.	Vienna	UNIDO
6.	Missions a) Consultation/study missions	15,000	15,000	first half'85 + 1986	to be decided	RN-SHP All Members
	b) UNIDO advisory missions	5,000	5,000	second half'85 + 1986	to be decided	UNIDO RN-SHP
7.	Video films	15,000	4,000	Apr.86-Sept.87	Hangzhou	Member countries and UNIDO
8.	Secretariat support	15,000	15,000	1985/86	Hangzhou	RN-SHP
T O T A L		190,500	82,000			

Technical Advisory Group Membership and Meetings
(Agenda Item 8)

71. Three members of the TAG emphasized the importance of convening TAG meetings every year to support and guide the timely evolvement of the RN-SHP mechanism and its activities during its developmental stages towards its maturity. The limited budget available for TAG meetings, it was agreed, should not constitute a constraint. All TAG members endorsed the idea of organizing TAG meetings on the basis of promotional TCDC basis, where available allocation would be used only to finance international travel of TAG members, while the DSA would be contributed by the respective governments.

72. The TAG discussed its membership; however, it was decided that a flexible approach be adopted on this matter pending further increase in the nomination of sub-focal points for SHP by member governments. It was decided that for the second TAG meeting in 1985, invitations would be extended only to member countries who had nominated their respective sub-focal points for SHP.

73. As regards participating member countries of the RN-SHP from the Pacific, the TAG requested the representative of UNIDO to explore with the PEDP (Pacific Energy Development Programme) Project Manager for similar support such as is being provided by REDP for Asian participating member countries to permit the Pacific participating member countries to attend the second TAG meeting in July 1985.

74. The TAG meetings should be opened to selected donor agencies who would thereafter be designated as Co-operate Members and who would participate fully in the discussions but without voting rights at the TAG meetings.

Date and Venue of Next Meeting
(Agenda Item 10)

75. The second meeting of the TAG was set for early July 1985 in Manila, the Philippines.

Other matters
Agenda Item 11

76. The TAG took note of the plans regarding a high-level meeting planned in conjunction with the official inauguration of the new phase-II HRC building and facilities in 1986, and agreed to postpone discussions thereof to the second meeting of the TAG.

77. The TAG entrusted UNIDO to finalize the report of this meeting, and to make a summary of recommendations which would appear at the very beginning of this Report.

78. On behalf of all members, the Chair-person of the First TAG Meeting Ms. Zenaida Santos, thanked the Government of China through the Ministry of Water Resources and Electric Power and the Secretariat of the RN-SHP, for the excellent arrangements and the warm hospitality accorded to the participants of the meeting. In turn, the Interim Co-ordinator expressed his gratitudes for the guidance received from the UNIDO representative and the Senior Co-ordinator of REDP, and thanked all members of the TAG and all others involved for their active contributions and assistance.

Adoption of the Report
Agenda Item 12

79. The report of the first meeting of the TAG of the RN-SHP was adopted in the evening of 13 December 1984 at Hangzhou.

Closure of the Meeting
Agenda Item 13

80. The meeting was adjourned at 21.00 hours on 13 December 1984.

ANNEX I

LIST OF PARTICIPANTS

TAG MEMBERS:

CHINA

Mr. Deng Bingli
Deputy Director
Department of Rural Electrification, in charge of SHP
Ministry of Water Resources and Electric Power
P.O. Box 2905, Beijing

Ms. Zou Youlan
Deputy Chief, Division of Economic Co-operation
Department of Foreign Affairs
Ministry of Water Resources and Electric Power
P.O. Box 2905, Beijing

Mr. Gong Tingrong
Regional Programme Officer
Department of International Relations
Ministry of Foreign Economic Relations and Trade,
Beijing

Mr. Zheng Naibo
Associate Chief Engineer
Hangzhou Regional Centre
P.O. Box 544, Hangzhou, China.

NEPAL

Mr. Rabindra Bahadur Shrestha
Project Director
Small Hydel Development Board
Pulchowk - Lalitpur, Kathmandu
Telex: 2312 JASROT NP

PHILIPPINES

Ms. Zenaida Santos
Executive Director
Mini-hydro Development Office
National Electrification Administration
1050 Quezon Ave., Quezon City, Manila
Telex: NEAPHIL 74242043

SRI LANKA

Mr. W.J.L.S. Fernando
Electrical Engineer
Energy Unit
Ceylon Electricity Board
P.O. Box 540, Colombo
Telex: 21368

THAILAND

Mr. Prathes Sutabutr
Deputy Secretary General
National Energy Administration
Pibultham Villa, Kasatsuk Bridge, Bangkok
Telex: 20524 NAPOWER TH

REGIONAL NETWORK FOR SMALL HYDRO POWER (RN-SHP) SECRETARIAT:

Mr. Zhu Xiaozhang
Interim Co-ordinator
Regional Network for Small Hydropower
P.O. Box 544, Hangzhou, China
Telex: 35034 HRC

Mr. Eugene Chang
Assistant to the Director
Hangzhou Regional Centre
P.O. Box 544, Hangzhou, China
Telex: 35034 HRC

Ms. Wang Qi
Deputy Head
External Liaison Division
Hangzhou Regional Centre

UNITED NATIONS ORGANIZATIONS:

ESCAP
REGIONAL ENERGY DEVELOPMENT PROGRAMME (REDP)

Mr.F. Harahap
Senior Co-ordinator
Regional Energy Development Programme
ESCAP
Rajdamnern Avenue, Bangkok 2, Thailand
Telex: 788 2392

UNIDO

Head
Development and Transfer of Technology Branch
UNIDO
P.O. Box 300, A-1400 Vienna, Austria
Telex: 135612

OBSERVERS:

Mr. Lu Jinrun
Engineer
Hangzhou Regional Centre
P.O. Box 544, Hangzhou, China

Mr. Hai Jing
Engineer in charge of Information
Hangzhou Regional Centre

Mr. Song Shengyi
Engineer of Turbine Manufacturing
Hangzhou Regional Centre

Mr. Fu Jingxi
Senior Engineer
Executive Editor of "SHP News"
Hangzhou Regional Centre

Mr. Ding Guangquan
Senior Engineer
Hangzhou Regional Centre

Mr. Lu Tianshou
Engineer
Hangzhou Regional Centre

Ms. Yang Yupeng
Engineer
Hangzhou Regional Centre

ANNEX II

LIST OF DOCUMENTS

ID/WG.433/1	Agenda
ID/WG.433/2	Annotated Agenda
ID/WG.433/3	Technical Advisory Group - Membership and Meetings
ID/WG.433/4	Decentralization of RN-SHP Activities
ID/WG.433/5	Review and Evaluation of Activities during 1982/83/84
ID/WG.433/6	Proposal for 1984/85/86
ID/WG.433/7	Designation of National Sub-Focal Points for Small Hydropower
ID/WG.433/8	Priority Subject Areas and Projects
ID/WG.433/9	Financial Resources
ID/WG.433/10	Strengthening of Network Activities
ID/WG.433/11	Future Funding of RN-SHP Activities
ID/WG.433/12	Hangzhou Regional Centre - Brief Report on Progress since November 1981
ID/WG.433/13	RN-SHP Consultation Mission Report
ID/WG.433/14	Potential Co-operative R+D Projects
ID/WG.433/15	Country Paper - China
ID/WG.433/16	Country Paper - Malaysia
ID/WG.433/17	Country Paper - Nepal
ID/WG.433/18	Country Paper - Philippines
ID/WG.433/19	Country Paper - Sri Lanka
ID/WG.433/20	Country Paper - Thailand
ID/WG.433/21	National Level Priority Subjects for the Promotion and Development of Small Hydropower
ID/WG.433/22	Report